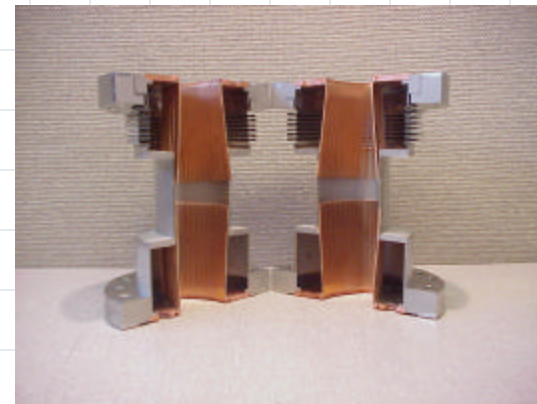
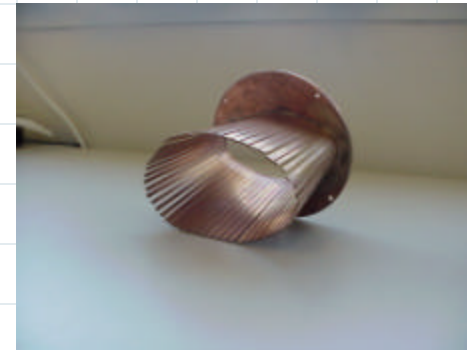


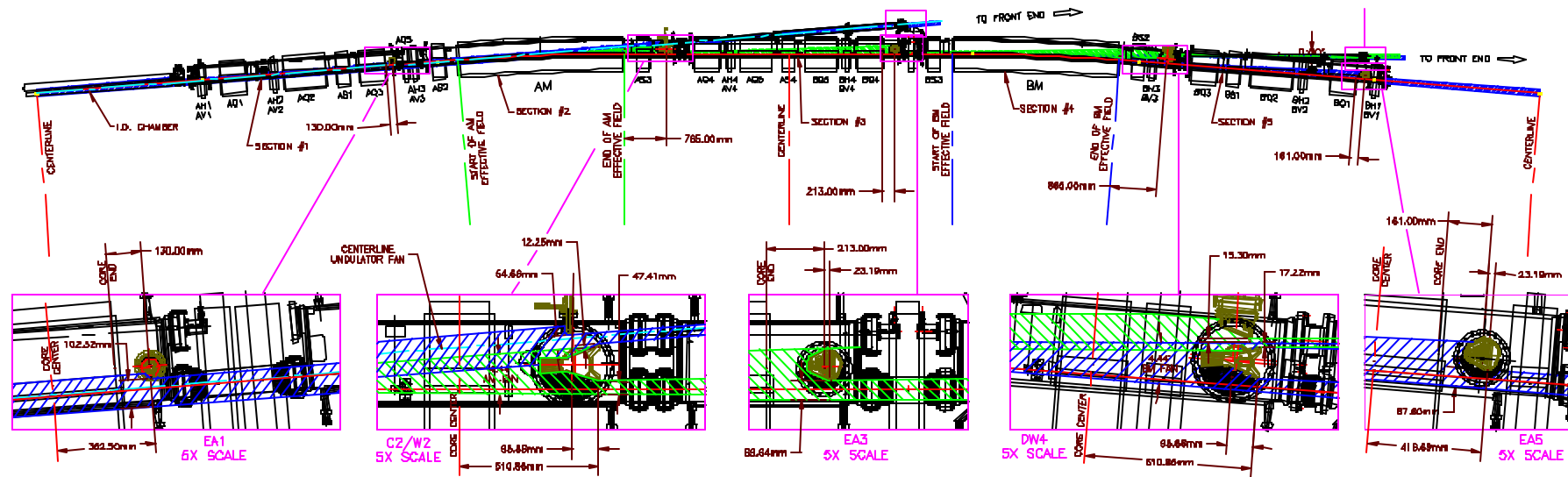
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## ASD, ME

### MAIN RESPONSIBILITIES

- ❖ Storage Ring;
  - ❖ Absorbers, Bellows, Liners
- ❖ Booster chambers;
  - ❖ Booster Vacuum Chambers
  - ❖ Bellows



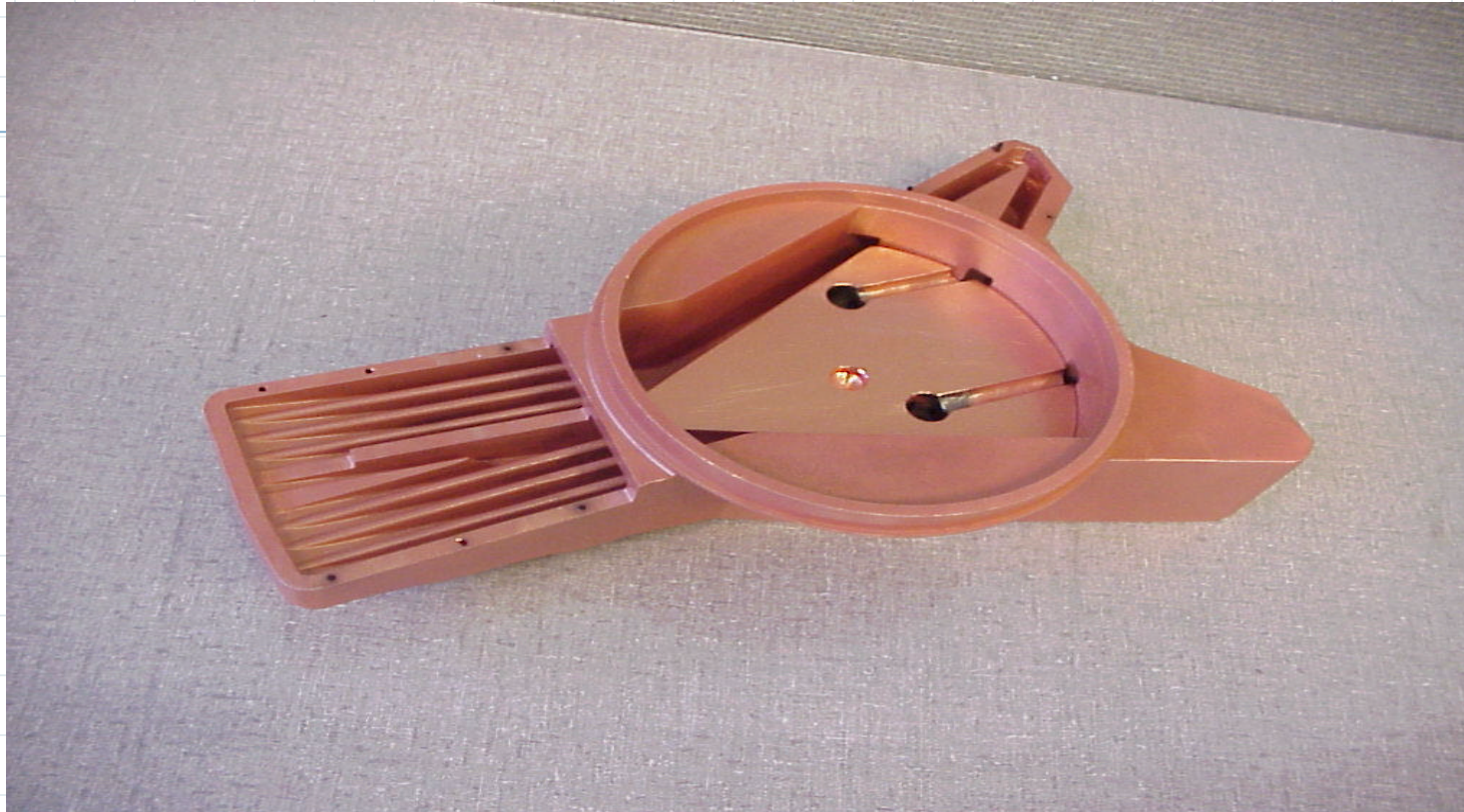


## Ray Tracing - sector 35

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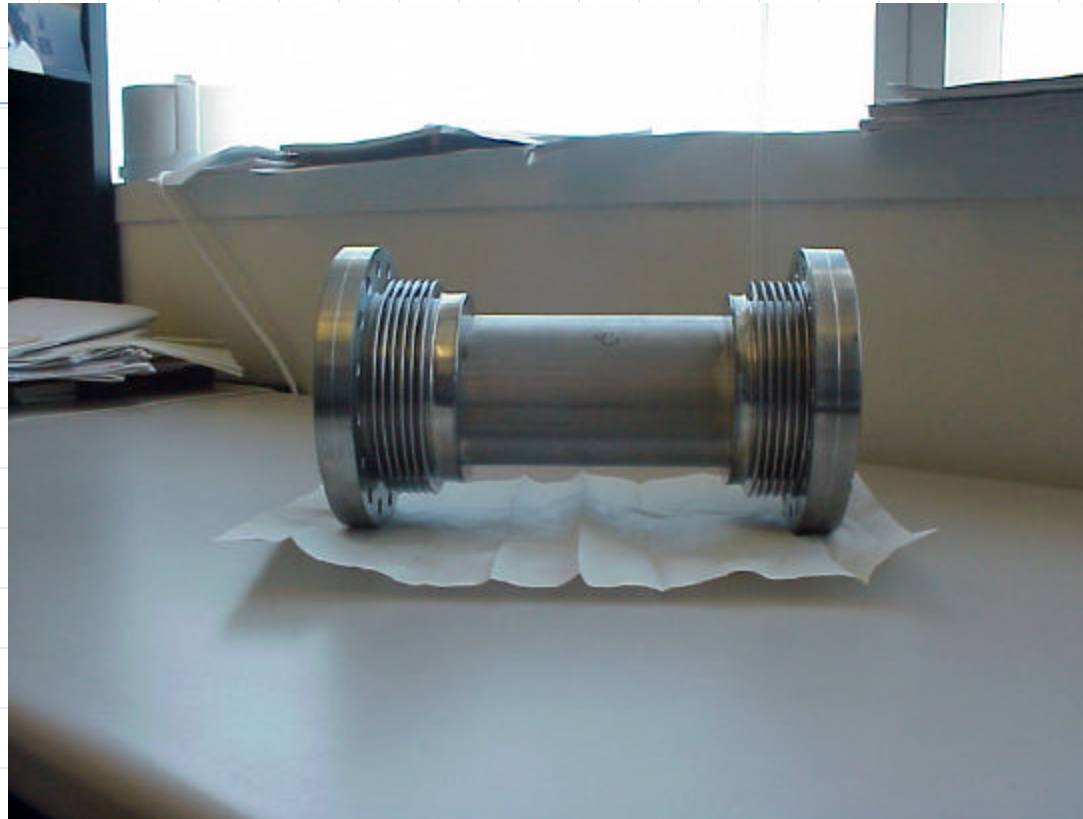


**APS Crotch Absorber**

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## B3 Bellows

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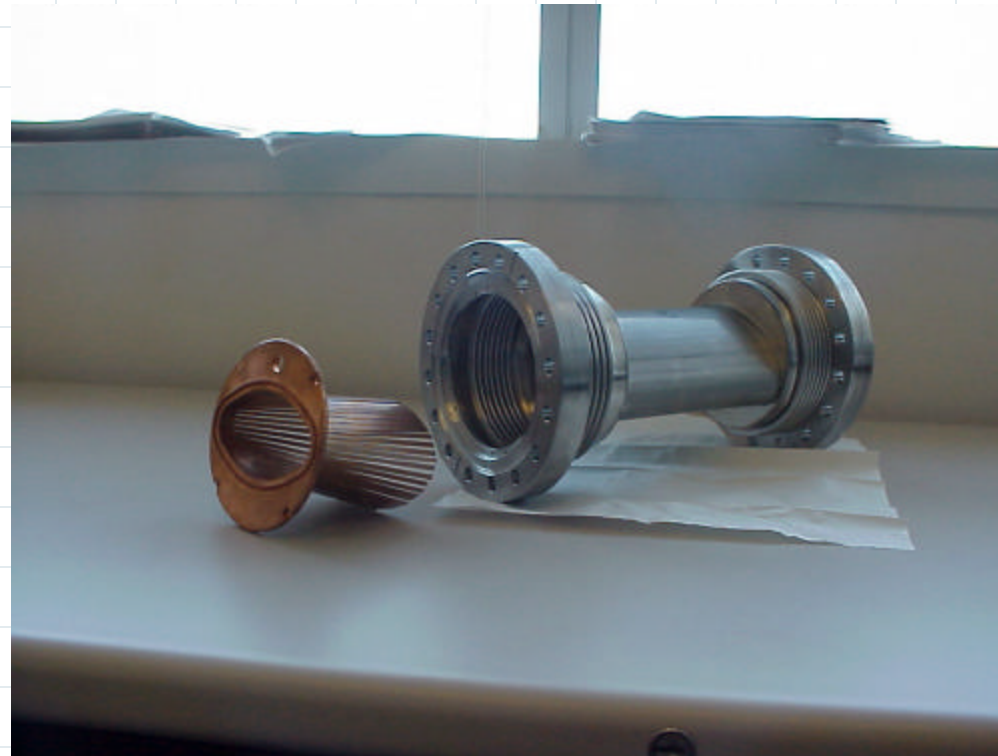
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# RF FINGERS

Develop high power RF fingers to prevent overheating problems



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# BEAM STABILITY

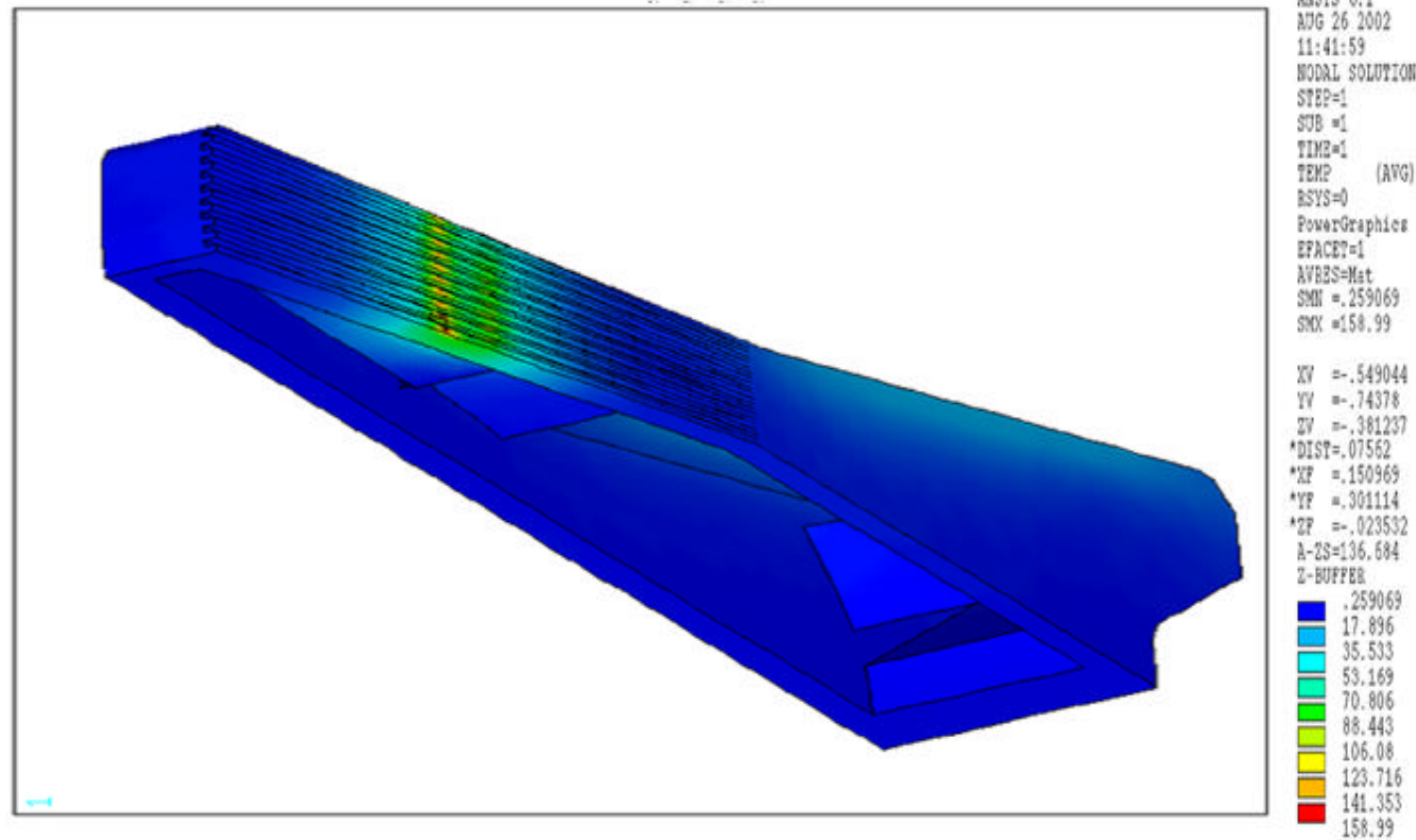
- ❖ Girder vibration measurements,
- ❖ Storage Ring tunnel air temperature,



## FINITE ELEMENT ANALYSIS (FEA)

- ❖ Storage Ring absorbers for high current capabilities (current increased incrementally at APS)
- ❖ Beam power densities
- ❖ Cooling water flow rates
- ❖ Film coefficient values
- ❖ Absorber beam exposure dimensions from ray tracings through AutoCAD
- ❖ Finite Element Analysis (FEA)
- ❖ "Thermal stress analysis of the high heat- load crotch absorber at the APS"

## Thermal Analysis of the crotch absorber



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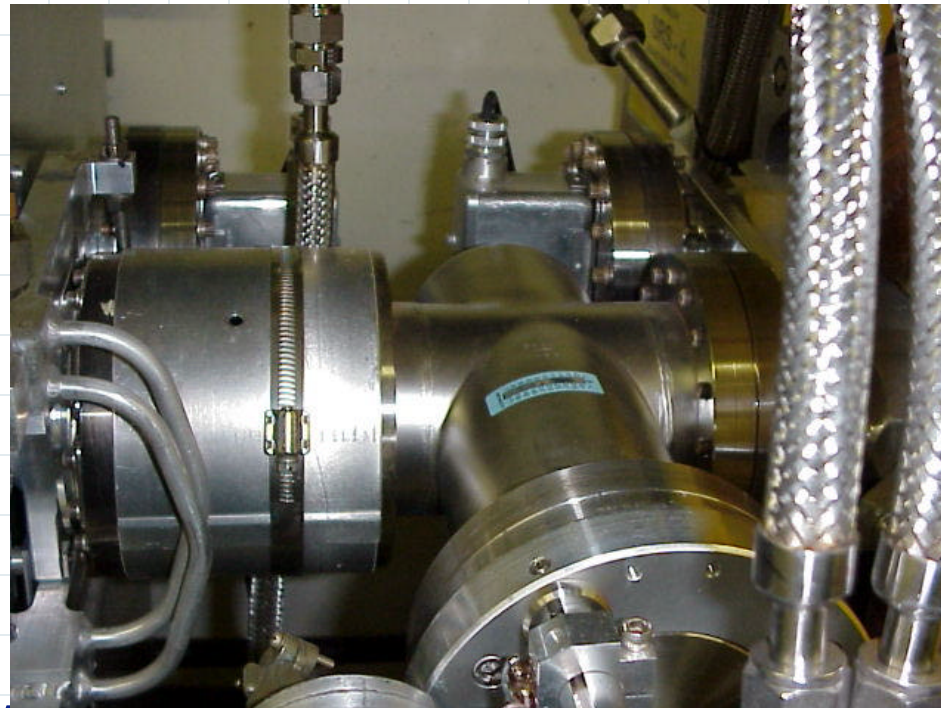
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# MONITOR

- ❖ Thermal measurements & EPICS connection for sectors 34, 36, 38, 39, 40 scrapers
- ❖ Bellows covers (between girders 3 & 4) in sectors 38, 39, and 40



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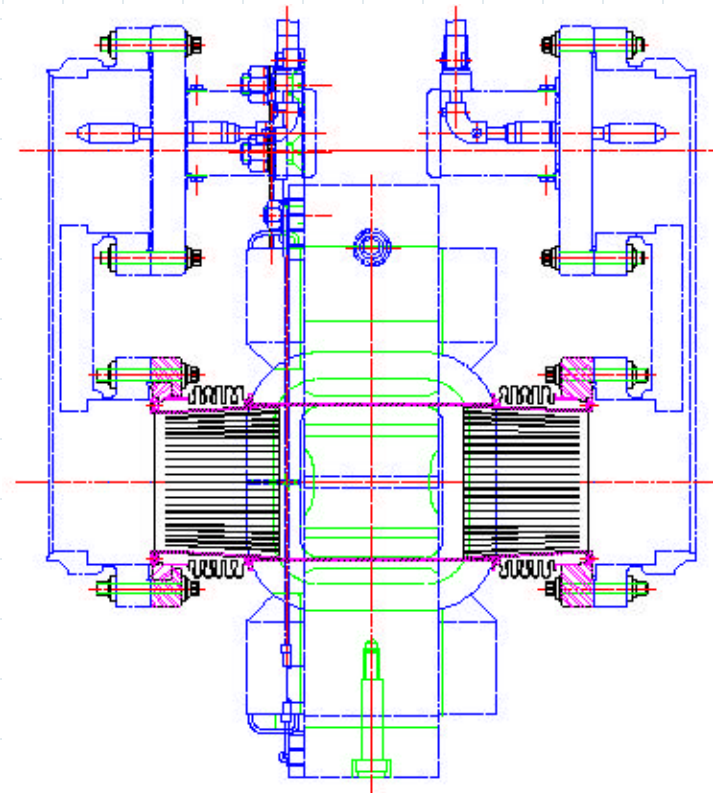
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## MONITOR (Cont'd)

- ❖ Monitor temperature measurements vs. beam current and vacuum measurements,
- ❖ Temperature tapes



## B3 Bellow assembly and component drawings



(B3) PLAN VIEW CROSS SECTION

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# SPARE PART FABRICATION

- ❖ Inventory on spare parts (Bellows, Liners, Absorbers, Booster Vacuum Chambers and Booster Chamber Bellows)
- ❖ Bellows assembly / components fabrication
  - Obtain mat'l/component quotations,
  - Order bellows sub-assemblies,
  - Bellows assembly construction,

# INSPECTION

- ❖ Absorbers, bellows/bellows protective covers,
- ❖ Temperature tapes